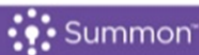


Re-inventing Discovery

An Analysis of Big Data

ANDREW NAGY

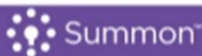
Sr. Product Manager
ProQuest | Serials Solutions



“The reality is user expectations have evolved and library systems have not kept up.”



Project Information Literacy
A large-scale study about early adults and their research habits



World Wide Web (1990?)
Amazon (1995)
Google (1998)
Wikipedia (2001)
Facebook (2004)
YouTube (2005)
Twitter (2006)
Amazon Kindle (2006/2007)
iPhone (2007)
iPad (2010)
Instagram (2010)
Pinterest (2011)



The product's design
changed more in the last two
years than it had in the
previous decade.

Jon Wiley, head designer of Google Search

FSTCOMPANY 2012.12.11
**HOW GOOGLE'S DESIGNERS
ARE QUIETLY OVERHAULING
SEARCH**
BY SARAH KESSLER

It starts with users in mind



- ▶ Want to be self-sufficient
- ▶ They do not ask questions
- ▶ They want to be anonymous
- ▶ Expect everything to be online and searchable
- ▶ Moving to mobile computing as primary device

Usability Studies

- ▶ One on one interviews
- ▶ Use of open ended questions
- ▶ Don't force them into unfamiliar territory

- ▶ Provides valuable feedback about:
 - ▶ Experience
 - ▶ How its used
 - ▶ Facial and body reactions

Some Findings

- ▶ Start with broad topical searches and add words until they find something they like – then they begin to engage with filters
- ▶ Students highly value the abstracts within the discovery experience as it helps them to determine if an item is “click worthy”
- ▶ Students did not find subject terms particularly useful but did like the disciplines

Matching User Expectations...

“...the test subjects criticised the fact that the location of the saved entries and the „save“ icon do not correspond with their experience of other systems. Thus a different icon and the location of the saved entries in the top right corner, as is the case with most shopping baskets on various websites, would correspond more closely to the experience of the users”

Helena Luca – University of Konstanz

Usability Studies

Problem:

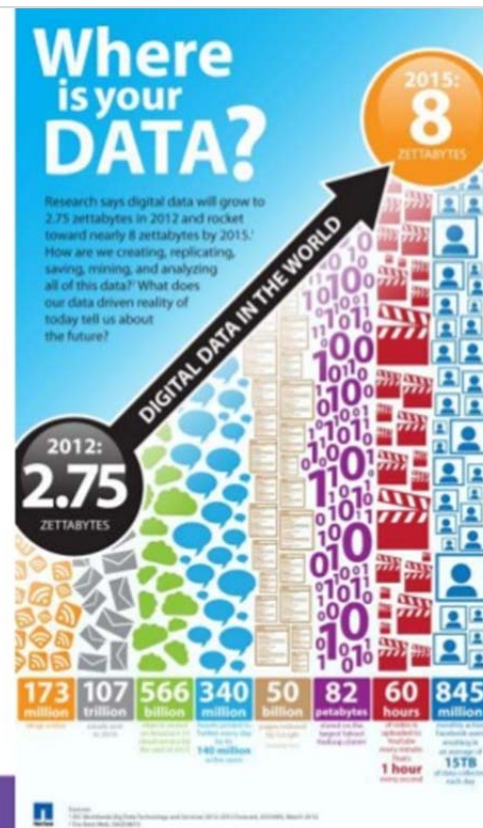
Users actually think
during usability studies



BIG DATA

Monitor usage of
real-time activity

- ▶ Where is your data?
- ▶ How do you mine your data?
- ▶ Do you even keep your data?

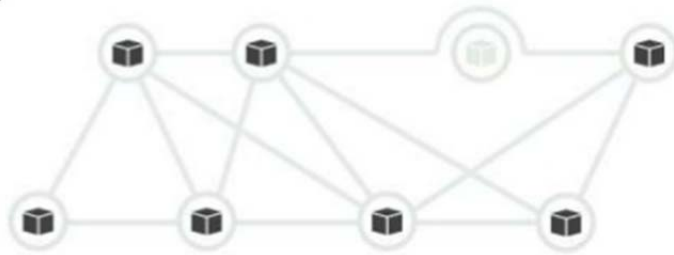


Big Data Warehouse

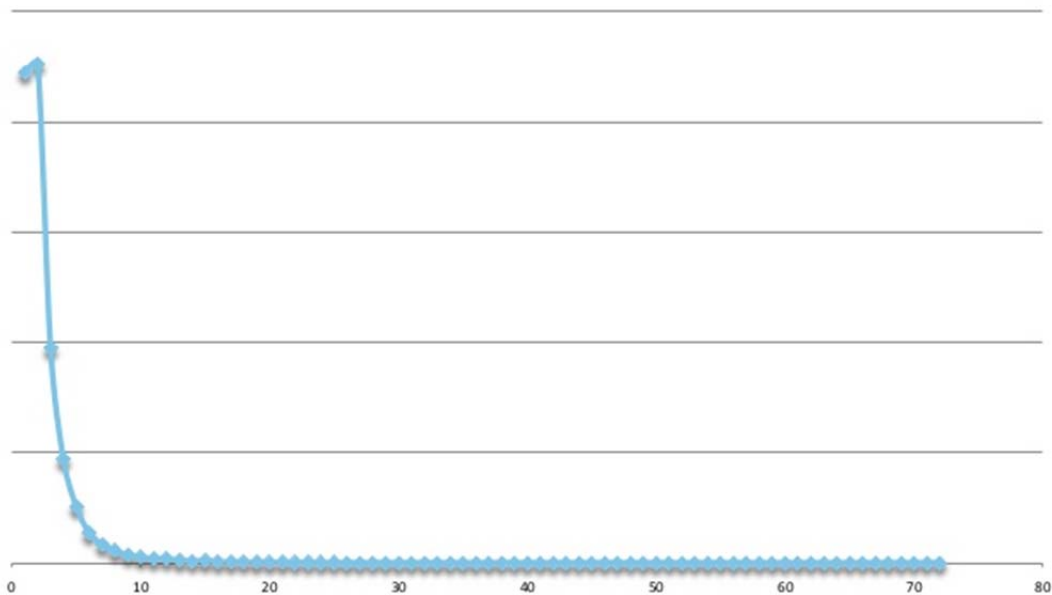
- ▶ Open Source
- ▶ Schema Free
- ▶ Data Versioning
- ▶ Fast/Safe Writing
- ▶ Built on Lucene



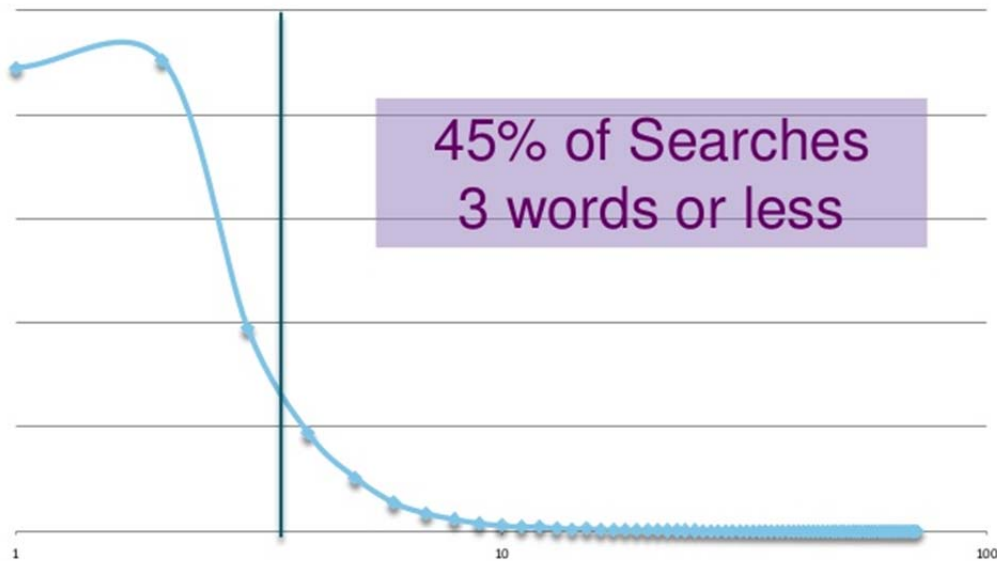
elasticsearch.



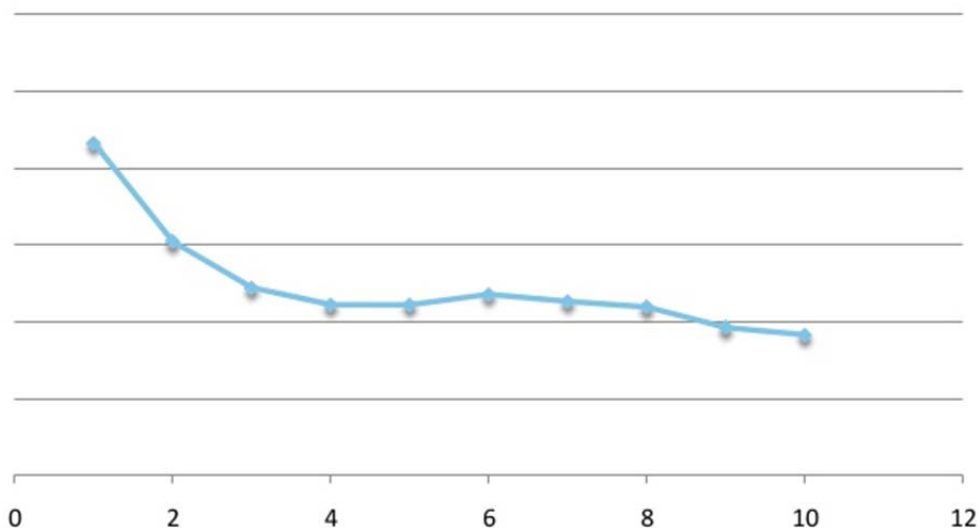
Number of terms per query



Number of terms per query



Abandonment Rate: Terms in Query



Top search terms

- ▶ Jstor
- ▶ Pubmed
- ▶ Leadership
- ▶ Global warming
- ▶ Diabetes
- ▶ Marketing
- ▶ Obesity
- ▶ Psychology
- ▶ Depression

Long tail search terms

- ▶ Branding in the Digital Age: You're Spending Your Money in All the Wrong Places
- ▶ Towards an Ethnographic Approach to Art Therapy Research: People with Psychiatric Disability as Collaborators
- ▶ A method for bias-reduction of sample-based MLE of the autologistic model
- ▶ group therapy native american women effectiveness
- ▶ endocrinology prolactin
- ▶ childhood obesity organic baby food

Improved User Experience

Cognitive development



by Flavell, John H
1977, The Prentice-Hall series in experimental psychology, ISBN 9780131397668, x, 286
Cognition in children

Book: SHELF, HAYDEN STACKS ► Show 1 more...

Cognitive development and working memory: a dialogue between neo-Piagetian and cognitive approaches



by MyLibrary
2011, ISBN 184872036X
Short-term memory, Cognition, Cognition in children

eBook: Full Text Online

Searches related to cognitive development

cognitive development in children
cognitive development piaget
cognitive development theory
cognitive development children

cognitive development in adolescence
cognitive development in early childhood
cognitive development the learning brain
cognitive development of bilingual children



Improved User Experience



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singapore

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Content Type

- ☒ Any
- ☐ Newspaper Article (1,257,694)
- ☐ Journal Article (305,401)
- ☐ Book / eBook (149,377)
- ☐ Dissertation/Thesis (32,181)
- ☐ Newsletter (30,031)
- ☐ Book Review (22,901)
- [more...](#)

Subject Terms

- ☒ Any
- ☐ studies (31,644)
- ☐ singapore (31,831)
- ☐ economic conditions (26,491)
- ☐ research (23,228)
- ☐ history (22,401)
- ☐ management (19,009)

Singapore: meet in singapore



by Singapore Convention Bureau
Singapore, 1992
Convention facilities, Periodicals
Journal
USE IN LIBRARY: HD9999 Tou.SMS v003 n23-26 94, CL Singapore-Malaysia Collection

Singapore



by Low, Shawn and McCrohan, Daniel
2012, 9th ed., Lonely Planet., ISBN 9781741796698, p. 223
Best-selling city guide to Singapore. Improved pull-out map with more detail. Practical, informative guide for tourists, business travelers, and temporary... Description and travel
Book: INPRO NO HOLD, DS599.2 Low 2012, CL Singapore-Malaysia Collection

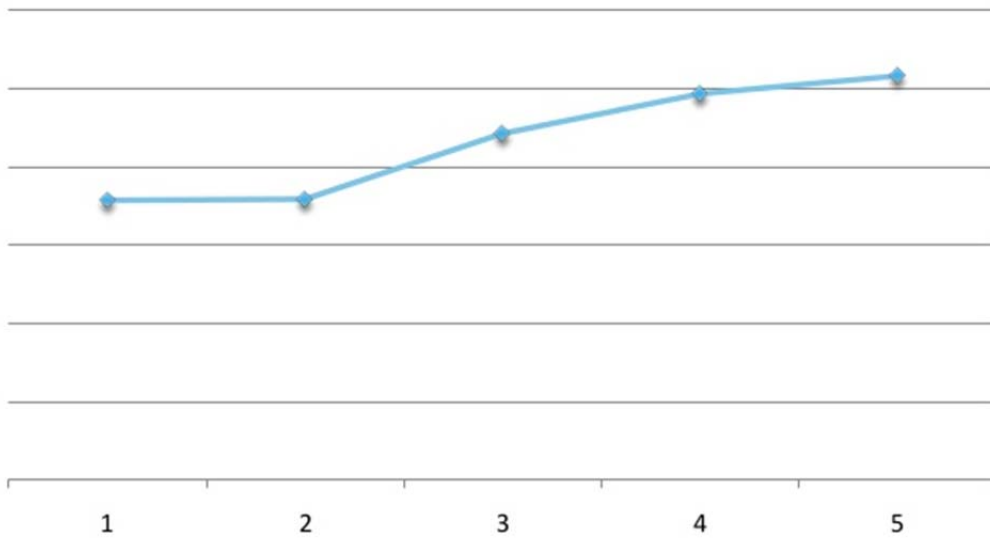
Singapore: health facts



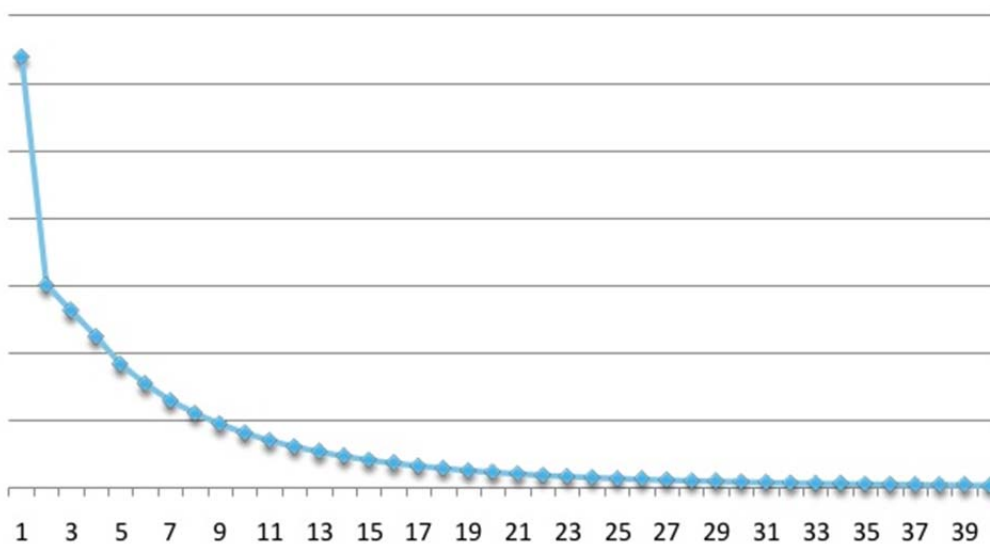
by Singapore, Ministry of Health, Research and Evaluation Dept
Singapore, 1900
Statistics, Health
Journal: REQUEST ITEM, RA312.12 SHF 1995, CL Closed Stacks (Loans Des...) ► Show 9 more...



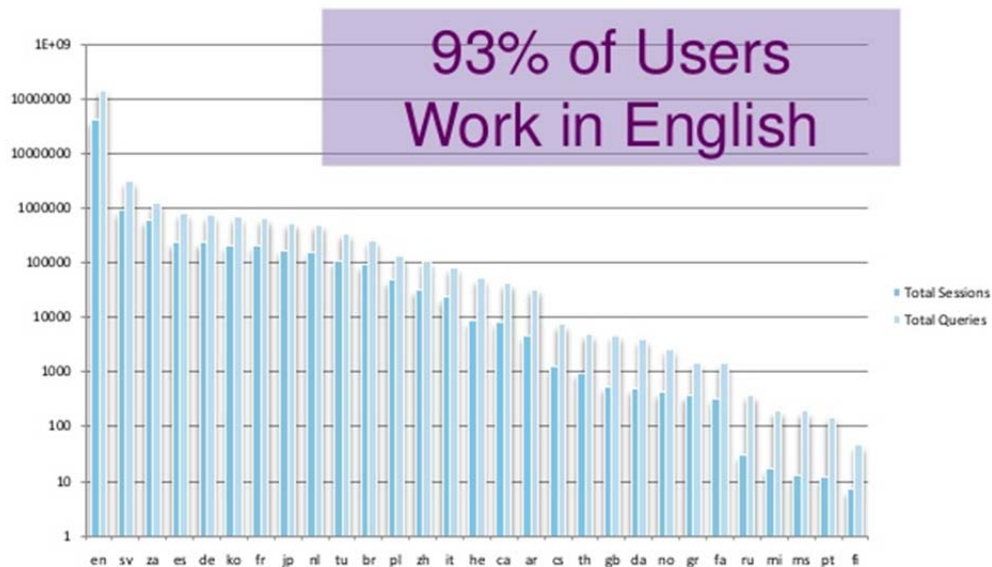
Filters per query in sequence



Number of Queries in a Session



Queries/Sessions per Language



Before



Refine your search

- ☐ Items with full text online
- ☐ Limit to articles from scholarly publications, including peer-review
- ☐ Limit to articles from peer-reviewed publications
- ☐ Exclude Newspaper Articles
- ☐ Items in the library catalog
- ☐ Add results beyond your library's collection

Content Type

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- ☐ Newspaper Article (1,534,943)
- ☐ Journal Article (230,188)
- ☐ Book / eBook (121,830)
- ☐ Newsletter (20,369)
- ☐ Book Review (19,838)
- ☐ Dissertation/Thesis (10,497)
- [more...](#)

Subject Terms

☒ Any

- ☐ heart attacks (105,330)
- ☐ cardiovascular disease (78,645)
- ☐ studies (72,180)
- ☐ history (38,259)
- ☐ medical research (33,116)
- ☐ research & development-r&d (27,244)
- [more...](#)

Publication Date

☒ Any

REFINE YOUR SEARCH

☒ Any

- Full Text Online
- Scholarly & Peer Reviewed
- Library Catalog Items

CONTENT TYPE

☒ Any

- Book/eBook
- Journal Article
- Newspaper Article
- More

DISCIPLINE

☒ Any

- Biology
- Chemistry
- Mathematics
- More

DATE

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30 - June - 2013

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SUBJECT TERMS

LIBRARY LOCATION

Summon

Heart attack: a medical dictionary, bibliography, and annotated research guide to internet references

by Parker, Philip M and Parker, James N
2003, ISBN 0851482445
Computer network resources, Myocardial infarction, Electronic books
[eBook - Full Text Online](#)

Heart attack

by 5 Tia Brown
Jel, ISSN 0021-0996, 07/2011, Volume 119, Issue 22, p. 22
Brown features comedian Kevin Hart. Years of touring have helped the funnyman hone his masterful comedic style: a hodgepodge of self-deprecation, storytelling... Endorsements, Divorce, Comedians, Families & family life, Success
[Journal Article - Full Text Online](#)

Heart Attack

The Gale Encyclopedia of Medicine, 2011, 4th, ISBN 9781414486408, Volume 3, pp. 1988 - 1994
...A heart attack is the death of or damage to heart muscle because the supply of blood to the heart is severely restricted or blocked. Heart attacks also...
[Reference - Available Online](#)

Heart Attack

Mosby's Medical Guide, 2011, 6th, ISBN 1567556779, Volume 3, pp. 1394 - 1399
[Reference - Available Online](#)

Heart Attack

2,345 Results sorted by **relevance** including "myocardial infarction"

[Just search heart attack](#)

Myocardial infarction

by Tracy Janet M.; Linn, Cassio; Glass, Richard M.
JAMA, The Journal of the American Medical Association
[Journal Article - Download \(+2 more\)](#)

Avoiding Heart Attacks and Strokes: Don't Be ...

by World Health Organization Staff
2004, ISBN 9241546727
"...Contents... Part 1. What you should know... 6.1 Under... standing heart attacks and strokes... What is a heart..."
[Book - On Shelf, Perkins/Stock Library](#)

On Having a Heart Attack: A Medical Memoir

by O'Rourke, William
2006, 1st Edition, University of Notre Dame Press
"In the first few pages of William O'Rourke's gripping book I learned what it feels like to have a heart attack and how the pressure or pleasure of daily events can keep us postpon..."
[eBook - Download \(+3 more\)](#)

Acute Myocardial Infarction

by White, Henry D.; Cheek, Derek P.
Lancet, 08/2006, Volume 372, Issue 9638
[Journal Article - Download \(+2 more\)](#)

Myocardial Infarction

by Edwards, Nicola C.; Townsend, J.N.
The Practitioner, 03/2006, Volume 250, Issue 1580
"... of Cardiovascular Medicine, University of Birmingham

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Book/Book

Myocardial Infarction
From Encyclopedia Britannica Online

Myocardial infarction (MI) or acute myocardial infarction (AMI), commonly known as a heart attack, results from the interruption of blood supply to a part of the heart, causing heart cells to die. It is most commonly due to occlusion (blockage) of a coronary artery following the rupture of a vulnerable atherosclerotic plaque, which is... [Read more](#)

Myocardial Infarction
by Doris Janet M. Lynn, Cassio Glass, Richard M. JAMA: The Journal of the American Medical Association
Journal Article: [Download](#) (+2 more)

Heart Attack: Advice for Patients by Patients
by Kathleen Berra
12/2001, ISBN 0300089605, p. 247
Millions of people, many of them younger than we care to believe, are living in the aftermath of a heart attack, and it is vital for them to learn how to reduce the risk factors for subsequent heart problems... Family & Health, MEDICAL, Myocardial infarction -- Popular works, Cardiology, Myocardial infarction
[Book: Full Text Online](#)

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Biotechnology: concepts and applications
by Patra, Niladri; Wang, Boyang; Kral, Petr. [More...](#)
Nano letters, 11/2009, Volume 9, Issue 11
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Chemistry
Mathematics
More

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SUBJECT TERMS

LIBRARY LOCATION

LANGUAGE

2,345 Results sorted by [relevance](#) including "myocardial infarction"
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Myocardial Infarction

by [Torpy, Janet M.](#); [Lynn, Cassio](#); [Glass, Richard M.](#)
JAMA: The Journal of the American Medical Association
Journal Article Download (+2 more)



Avoiding Heart Attacks and Strokes: Don't Be...

by [World Health Organization Staff](#)
2004. ISBN 9241548727
"...Contents... Part 1. What you should know...6.1 Under...
standing heart attacks and strokes... What is a heart..."
Book: On Shelf, Perkins/Boston Library



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learned what it feels like to have a heart attack and how the
pressure or pleasure of daily events can keep us postpon..."
eBook: Download (+3 more)



Acute Myocardial Infarction

by [White, Harvey D.](#); [Chew, Derek P.](#)
Lancet, 06/2008, Volume 372, Issue 9638
Journal Article Download (+2 more)



Myocardial Infarction

by [Edwards, Nicola C.](#); [Toomey, J.N.](#)
The Practitioner, 03/2006, Volume 250, Issue 1680
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